

REMARKS

The Office Action dated August 29, 2008, has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

By this Response, claims 1-2, 4-6, and 8-17 have been amended to more particularly point out and distinctly claim the subject matter of the present invention. Claim 18 has been added. No new matter has been added. Support for the above amendments is provided in the Specification at least in paragraph [0041]. Accordingly, claims 1-18 are currently pending in the application, of which claims 1, 10, 14, and 18 are independent claims.

In view of the above amendments and the following remarks, Applicant respectfully requests reconsideration and timely withdrawal of the pending rejections to the claims for the reasons discussed below.

Double Patenting Rejections

The Office Action provisionally rejected claims 1-17 under the judicially created doctrine of non-statutory obviousness-type double patenting over claims 1-19 of U.S. co-pending Application No. 11/630,159 ("the '159 application"). The double patenting rejection is provisional because the conflicting claims have not yet been issued. Applicant respectfully traverses these rejections for at least the following reasons.

Since the claims in both the '159 application and the present application are liable to change before either issues, it is respectfully submitted that this rejection is moot. The rejection is also moot at least because the issue of double-patenting is not truly ready for determination until a patent issues, whose claims can then serve as a benchmark for determining whether the other applications improperly seek to extend the Applicant's rights. Withdrawal of the rejection is respectfully requested.

Claim Rejections under 35 U.S.C. §102(e)

The Office Action rejected claims 1-17 under 35 U.S.C. §102(e) as allegedly being anticipated by Liu, *et al.* (U.S. Publication No. 2004/0190467) ("Liu"). The Office alleged that Liu discloses or suggests every claim feature recited in claims 1-17. Applicant respectfully submits that the claims recite subject matter that is neither disclosed nor suggested in Liu.

Claim 1, upon which claims 2-9 depend, recites a method. The method includes receiving beacon frames at beacon intervals, extracting beacon interval information from a beacon frame, and monitoring data traffic of a terminal. The method further includes defining at least one parameter describing a data traffic pattern of the terminal, and dynamically controlling a power state of the terminal, on the basis of the at least one parameter describing the data traffic pattern of the terminal and the beacon interval information, so that the terminal is maintained in one of at least two power states. The at least two power states include an active state and a power save state.

Claim 10, upon which claims 11-13 depend, recites an apparatus. The apparatus includes a receiver configured to receive beacon frames at beacon intervals, and an extractor configured to extract beacon interval information from a beacon frame. The apparatus further includes a traffic monitor configured to monitor data traffic of a terminal and to define at least one parameter describing a data traffic pattern of the terminal, and a controller configured to manage power for dynamically controlling a power state of the terminal on the basis of the at least one parameter describing the data traffic pattern of the terminal and the beacon interval information to maintain the terminal in one of at least two power states. The at least two power states include an active state and a power save state.

Claim 14, upon which claims 15-17 depend, recites a system. The system includes at least one system entity configured to broadcast beacon frames at beacon intervals, and at least one wireless terminal configured to extract beacon interval information from a beacon frame. The at least one wireless terminal includes a traffic monitor configured to monitor data traffic of the at least one wireless terminal and to define at least one parameter describing a data traffic pattern of the terminal. The at least one wireless terminal further includes a controller configured to dynamically control a power state of the at least one wireless terminal on the basis of the at least one parameter describing the data traffic pattern of the terminal and the beacon interval information to maintain the at least one wireless terminal in one of at least two power states. The at least two power states include an active state and a power save state.

Applicant respectfully submits that certain embodiments of the present invention provide non-obvious advantages. Specifically, certain embodiments of the present invention relate to at least one parameter describing a data traffic pattern of a terminal used with beacon interval information to dynamically control a power state of the terminal. As a result, a power save mode can more efficiently utilize silent periods during which no transmission or reception occurs at the terminal.

As will be discussed below, Liu fails to disclose or suggest each and every element recited in claims 1-17, and therefore fails to provide the advantages and the features discussed above.

Liu is directed to a power saving mechanism for wireless LANs via a schedule information vector. Liu describes scheduling data transmissions of stations with a Schedule Information Vector (SIV) protocol. In the SIV protocol, an access point (AP) transmits a SIV frame that includes scheduled wake-up times for the stations. The scheduled wake-up times may be adjusted on the basis *of the network traffic*. Liu further teaches that a power saving station needs to wake up periodically for the beacon and the SIV frames. After the power saving station has received the schedule in a SIV frame from the AP, the power saving station decides whether to go back to sleep or to continue listening for transmissions (Liu, Abstract; paragraphs [0025]-[0032]).

Applicant respectfully submits that Liu fails to disclose each and every element recited in claims 1-17. In particular, Liu fails to disclose or suggest, at least, “dynamically controlling a power state of the terminal, on the basis of said at least one

parameter describing the data traffic pattern of the terminal and the beacon interval information, so that the terminal is maintained in one of at least two power states,” as recited in claim 1 (emphasis added), and similarly recited in claims 10 and 14.

The Office Action alleged that Liu discloses the aforementioned claim features, citing paragraphs [0045]-[0046] and [0065]. However, a review of these passages in relation to the entire teachings of Liu demonstrates that Liu fails to disclose or suggest each and every element recited in claims 1, 10, and 14.

The Office Action alleged that the parameters, such as the station identifiers and the scheduled wake-up times in the SIV frame, correspond with the features for the “at least one parameter describing a data traffic pattern of the terminal,” as recited in claim 1, and similarly recited in claims 10 and 14. Rather, Liu teaches that the parameters, such as station identifiers or scheduled wake-up times in the SIV frame, as shown in FIG. 5B, identify each station and the time instants each of the stations is scheduled to transmit a transmission on either an uplink or downlink. Adjustments to scheduling only consider *network traffic in the access point*.

The Office Action further alleged that the teachings in Liu for the “adjusted to schedule wake-up time” correspond to the features for “dynamically controlling,” as recited in claim 1, and similarly recited in claims 10 and 14. Rather, Liu describes that the stations decide on entering the sleep mode or remaining awake, based on the length of the schedule (Liu, paragraph [0084]). Thus, the schedule received in the SIV frame fails to control the power state of the stations. Further, the station needs to make separate

decisions on entering the sleep mode or remaining awake. The information on the wake-up time of the station and the length of the schedule may be used for making this decision. Therefore, the sending of the SIV frame from the AP, as described in the teachings of Liu, fails to disclose or suggest, at least, “dynamically controlling the power station of the terminal,” as recited in claim 1, and similarly recited in claims 10 and 14.

In fact, Liu actually teaches away from the features recited in claims 1, 10, and 14. Liu describes that the wake-up times cannot be used for controlling the power state of a station. In paragraph [0084], Liu teaches that there may not be any net power savings benefit for a station entering the sleep state if the station’s scheduled transmission will follow the SIV frame in a short time. The station entering and leaving the sleep state on the basis of the wake-up times in the SIV frame may end up with a high power consumption than if it would not enter the sleep state. Therefore, one of ordinary skill in the art would have understood that the wake-up schedule in the SIV frame is unsuitable for *dynamically controlling the power state of the terminal*.

Hence, Liu teaches that the scheduling of wake-up times is performed *in the access point*, whereas certain embodiments of the present invention describe that the scheduling of transmissions is performed *in the terminal*. Furthermore, the SIV frame, as taught in Liu, only provides scheduling on the basis *of the network traffic*. Therefore, one of ordinary skill in the art would have clearly understood that Liu fails to teach control of the power state *of the terminal*. Therefore, Liu fails to disclose or suggest, at least, “dynamically controlling a power state of the terminal, on the basis of said at least one

parameter describing the data traffic pattern of the terminal and the beacon interval information, so that the terminal is maintained in one of at least two power states,” as recited in claim 1 (emphasis added), and similarly recited in claims 10 and 14.

Claims 2-9 depend from claim 1. Claims 11-13 depend from claim 10. Claims 15-17 depend from claim 14. Accordingly, claims 2-9, 11-13, and 15-17 should be allowable for at least their dependency upon an allowable base claim, and for the specific limitations recited therein.

Therefore, Applicant respectfully requests withdrawal of the rejections of claims 1-17 under 35 U.S.C. §102(e) and respectfully submits that claims 1, 10, and 14, and the claims that depend therefrom, are now in condition for allowance.

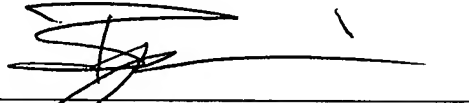
CONCLUSION

In conclusion, Applicant respectfully submits that Liu fails to disclose or suggest each and every element recited in claims 1-18. The distinctions previously noted are more than sufficient to render the claimed invention unanticipated. It is therefore respectfully requested that all of claims 1-18 be allowed, and this present application be passed to issuance.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, Applicant’s undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, Applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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Enclosures: Additional Claim Fee Transmittal
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